Viglen
HPC Catalogue

IT's Personal

Issue 9 of the HPC catalogue builds on the stable platform that our Intel® and AMD nodes offer by the addition of the Intel® Xeon Phi™ to our range. This PCI Express Co-Processor card compliments the CPU offering significant performance gains with minimum changes to code. This solution offers huge scalability flexibility, enabling low-power massively parallel clusters in a very small footprint.

Viglen - IT's Personal

Bordan Tkachuk
CEO Viglen LTD

Viglen is the only UK Educational Solutions organisation to be fully ISO 20000 accredited - the international standard for IT Service Management. ISO 20000-1 promotes the adoption of an integrated process approach to deliver managed services effectively and meet business and customer requirements. For further information, please see www.viglen.co.uk

Introducing the Intel® Xeon Phi™ Co-Processor

There can be no doubt that Intel® is the dominant force in providing CPU technology for Servers. With the Introduction of their Xeon Phi™ Co-Processor, they have used the expertise they have gained from years of designing server processors that set the benchmark for innovative features, performance and stability to produce a Co-Processor solution which offers massive parallelisation in a single card.

With the Intel® Phi Co-Processor offering the ability to run x86 code within any of its 60 cores, this solution offers the flexibility of running code originally designed for CPU on the Phi. The Phi also supports the ability to run as a compute node, running a full OS, making this solution a Supercomputer on a chip.

Great Minds Think

viglen

High Performance Computing Nodes

A Viglen HPC Solution is not just about leading edge hardware, it's about the expertise to plan, deploy, tune, manage and support the cluster through its whole life, ensuring you make maximum use from your HPC resources.

To find out why leading institutions choose Viglen HPC call 01727 201 800 or visit **www.viglen.co.uk/hpc**

HX525T2i Compute Node

2U Quad Motherboard Compute Chassis	One PCI Express Slot per motherboard
Intel® C602 High Performance Server Chipset	Integrated Dual Intel® Gigabit Ethernet per motherboard
Dual Quad Core Intel® Xeon® E5-2620 2.0GHz 15MB 7.20GT/sec on each motherboard	1620W 80Plus Platinum PSUs (Redundant 1+1)
16GB Registered DDR3 1666MHz with eight DIMM sockets for up to 256GB of memory on each motherboard	IPMI 2.0 with KVM over LAN support on each motherboard
	3 Year On-Site Next Business Day Warranty
Three 3.5" Hot-Swap Drive bays per motherboard	
One 250GB Enterprise Class RAID Edition SATA Hard Disk per motherboard	

Order Code: **HPCNODE**   from **£6,527**.00

HX515Hi 1U Head Node
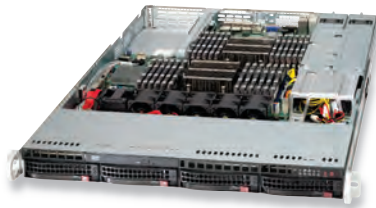
Intel® C606 High Performance Server Chipset	LSI 9260-8i SAS/SATA RAID Controller with BBU
Dual Quad Core Intel® Xeon® E5-2620 2.0GHz 15MB 7.20GT/sec	Two PCI Express Slots
16GB Registered DDR3 1666MHz with Twenty Four DIMM sockets for up to 768GB of memory	Integrated Dual Intel® Gigabit Ethernet
	920W 80Plus Platinum PSUs (Redundant 1+1)
Four 3.5" Hot-Swap Drive bays	IPMI 2.0 with KVM over LAN support
Two 250GB Enterprise Class RAID Edition SATA Hard Disks	3 Year On-Site Next Business Day Warranty

Order Code: **HPCNODE**   from **£2,731**.00

HX525Hi 2U Head Node

Intel® C606 High Performance Server Chipset	LSI 9260-8i SAS/SATA RAID Controller with BBU
Dual Quad Core Intel® Xeon® E5-2620 2.0GHz 15MB 7.20GT/sec	Two PCI Express Slots
16GB Registered DDR3 1666MHz with Twenty Four DIMM sockets for up to 768GB of memory	Integrated Dual Intel® Gigabit Ethernet
	920W 80Plus Platinum PSUs (Redundant 1+1)
Ten (8+2) 3.5" Hot-Swap Drive bays	IPMI 2.0 with KVM over LAN support
Two 250GB Enterprise Class RAID Edition SATA Hard Disks	3 Year On-Site Next Business Day Warranty

Order Code: **HPCNODE**   from **£3,208**.00

HX515Gi 1U GPU Node

Intel® C606 High Performance Server Chipset	Three PCI Express Slots for GPU, One PCI Express Slot for Expansion
Dual Quad Core Intel® Xeon® E5-2620 2.0GHz 15MB 7.20GT/sec	Integrated Dual Intel® Gigabit Ethernet
16GB Registered DDR3 1666MHz with Twenty Four DIMM sockets for up to 768GB of memory	1800W 80Plus Platinum PSUs (Redundant 1+1)
Three 2.5" Hot-Swap Drive bays	IPMI 2.0 with KVM over LAN support
One 250GB Enterprise Class RAID Edition SATA Hard Disks	3 Year On-Site Next Business Day Warranty
One NVIDIA M2075 GPU Card	

Supports up to 3 x M2075 or M2090 GPUs

Order Code: **HPCNODE**   from **£4,653**.00

HX545S-36i 4U Storage Node

4U 36-Bay Storage Chassis

Intel® C602 High Performance Server Chipset

Dual Quad Core Intel® Xeon® E5-2620 2.0GHz 15MB 7.20GT/sec

16GB Registered DDR3 1666MHz with Sixteen DIMM sockets for up to 512GB of memory

Thirty Six 3.5" Hot-Swap Drive bays using SAS Expander Technology

Two 250GB Enterprise Class RAID Edition SATA Hard Disk

Four PCI Express Slots

LSI 9260-8i RAID Controller with BBU

Integrated Dual Intel® Gigabit Ethernet per motherboard

1280W 80Plus Platinum PSUs (Redundant 1+1)

IPMI 2.0 with KVM over LAN support on each motherboard

3 Year On-Site Next Business Day Warranty

Order Code: **HPCNODE**   from **£4,217**.00

HX525S-12i 2U Storage Node

2U 12-Bay Storage Chassis

Intel® C602 High Performance Server Chipset

Dual Quad Core Intel® Xeon® E5-2620 2.0GHz 15MB 7.20GT/sec

16GB Registered DDR3 1666MHz with Sixteen DIMM sockets for up to 512GB of memory

Twelve 3.5" Hot-Swap Drive bays using SAS Expander Technology

Two 250GB Enterprise Class RAID Edition SATA Hard Disk

Four PCI Express Slots

LSI 9260-8i RAID Controller with BBU

Integrated Dual Intel® Gigabit Ethernet per motherboard

920W 80Plus Platinum PSUs (Redundant 1+1)

IPMI 2.0 with KVM over LAN support on each motherboard

3 Year On-Site Next Business Day Warranty

Order Code: **HPCNODE**   from **£3,218**.00

HX545S-24i 4U Storage Node

4U 24-Bay Storage Chassis

Intel® C602 High Performance Server Chipset

Dual Quad Core Intel® Xeon® E5-2620 2.0GHz 15MB 7.20GT/sec

16GB Registered DDR3 1666MHz with Sixteen DIMM sockets for up to 512GB of memory

Twenty Four 3.5" Hot-Swap Drive bays using SAS Expander Technology

Two 250GB Enterprise Class RAID Edition SATA Hard Disk

Four PCI Express Slots

LSI 9260-8i RAID Controller with BBU

Integrated Dual Intel® Gigabit Ethernet per motherboard

920W 80Plus Platinum PSUs (Redundant 1+1)

IPMI 2.0 with KVM over LAN support on each motherboard

3 Year On-Site Next Business Day Warranty

Order Code: **HPCNODE**   from **£3,481**.00

80 PLUS®

All HPC Nodes on this page are 80Plus Platinum Certified

Viglen Solutions Harnessing the Intel® Xeon Phi™ Coprocessor Family

Breakthrough performance for Highly-Parallel Applications

Intel® Xeon Phi™ coprocessors, based on Intel Many Integrated Core(MIC) architecture, complement the industry-leading performance andenergy-efficiency of the Intel® Xeon® processor E5 family to enable dramatic performance gains for some of today's most demanding applications—up to 1.2 teraflops per coprocessor. Manufactured using Intel'sindustry-leading 22nm technology with 3D Tri-Gate transistors, each coprocessor features many more and smaller cores, many more threads, and wider vector units than an Intel® Xeon® Processor. The high degree of parallelism compensates for the lower speed of each individual core to deliver higher aggregate performance for highly-parallel workloads.

A Single Programming Model for All Your Code

Existing applications will need to be tuned and recompiled to maximize throughput, but your developers won't need to rethink the entire problem or master new tools and programming models. Instead, they can reuse existing code and maintain a common code base using familiar tools and methods. Code can be optimized just once for both Intel® Xeon® processors and Intel® Xeon Phi™ coprocessors. The same techniques deliver optimal performance for both, so the investment you make in parallelizing your code will deliver benefits across the full range of computing environments.

Which Applications Are Suitable?

While a majority of applications will continue to achieve maximum performance on Intel® Xeon® processors, certain highly-parallel applicationswill benefit dramatically by using Intel® Xeon Phi™ coprocessors. To take full advantage of Intel® Xeon Phi™ coprocessors, an application must scale well to over one-hundred threads, and either make extensive use of vectors or efficiently use more local memory bandwidth than is available on an Intel® Xeon® processor.

Key Features

- Up to 1.2 teraflops doubleprecision performance for highlyparallel applications
- Familiar Intel® architecture programming model for simplified development
- Common code base with Intel® Xeon® processors to maximize performance investment
- Linux* hosting and IP addressability for simplicity and flexibility
- Multiple execution models fortailored workload performance

Viglen Model	HX515Gi	HX525Gi	Personal Supercomputer
Number of Phi Cards supported	3	4	4
Type of Phi Card supported	3120P, 5110P, 7120P	3120P, 5110P,7120P	3120A
Prices from:	£4569	£4669	£4332

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